WHAT IS CLAIMED IS:

1. A nonwoven fabric formed on a three-dimensional image transfer device, said fabric comprising a continuous web of substantially endless thermoplastic melt extruded filaments having a denier of about 0.5 to 3, wherein said filaments are hydroentangled in the form of interengaged packed loops, with the filaments being substantially free of breaking, wrapping and knotting.

2. A nonwoven fabric as in claim 1, wherein said filaments have a denier of about 1.0 to 2.5.

3. A nonwoven fabric as in claim 1, wherein said thermoplastic melt extruded filaments comprise polyolefins, polyamide, or polyesters.

4. A nonwoven fabric as in claim 1, wherein said nonwoven fabric has a basis weight of between about 20 and 450 g/m^2.

5. A nonwoven fabric as in claim 1, further comprising secondary component filaments comprising between 5% and 95% by weight of the fabric.

6. A nonwoven fabric as in claim 1, wherein said fabric having a surface treatment chosen from the group comprising: wetting agents, surfactant, fluorocarbons, antistats, antimicrobial, binders, and flame retardants.

7. A nonwoven fabric as in claim 1, wherein said fabric comprises an article chosen from the group comprising: an absorbent article, industrial apparel, medical apparel, medical fabric, agricultural fabric, recreational fabric, upholstery, and durable apparel.

8. A nonwoven fabric as in claim 1, wherein said fabric has a machine direction elongation value of at least 75%, and a cross-direction elongation value of at least 100%.

9. A nonwoven fabric as in claim 1, wherein said fabric has a fiber entanglement frequency of at least 10.0, and a fiber entanglement value of at least 1.00.

10. A nonwoven fabric as in claim 1, wherein said fabric has a fiber interlock value of at least 15.

11. A nonwoven fabric as in claim 1, wherein said continuous web of substantially endless thermoplastic filaments comprises a plurality of layers of said continuous filaments.

12. A nonwoven fabric as in claim 1, wherein said interengaged packed loops provide a structure wherein cross-direction elongation is directly proportional to cross-directional tensile strength.

13. A nonwoven fabric formed on a three-dimensional image transfer device, comprising a continuous web of substantially endless melt-extruded thermoplastic filaments having a denier of about 1.0 to 2.5, wherein said filaments are hydroentangled in the form of interengaged packed loops, with the filaments being substantially free of breaking, wrapping, and knotting; said fabric having a basis weight of between about 20 and 450 gm/m^2, having a machine-direction elongation value of at least 75% and a cross-direction value of at least 100%, having a fiber entanglement frequency of at least 10.0, a fiber entanglement completeness value of at least 1.00, a fiber interlock value of at least 15.

14. A method for producing a nonwoven fabric, said method comprising the steps of:

a) continuously melt-extruding a thermoplastic polymer into a plurality of endless filaments having a denier of between about 0.5 to 3.0 to provide an unbonded web; and

b) continuously and without interruption, supporting said web on a three-dimensional image transfer device while subjecting said web to hydraulic entanglement by at least one successive water jet station comprising a plurality of water jets at successively higher hydraulic pressures to produce a bonded continuous web of continuous filaments.

15. A method of producing a nonwoven fabric as in claim 14, wherein said filaments have a denier of between about 1 to 2.5.

16. A method of producing a nonwoven fabric as in claim 14, wherein said bonded continuous web has a packed interengaged filament loop configuration substantially free of wrapping and knotting.

17. A method of producing a nonwoven fabric as in claim 14, wherein said moving support is chosen from the group comprising a dual wire, forming drum, and a single wire.

18. A method of producing a nonwoven fabric as in claim 14, wherein said moving support has a three-dimensional surface.

19. A method of producing a nonwoven fabric as in claim 14, wherein said thermoplastic polymer filaments are chosen from the group comprising polyolefins, polyamide, and polyesters.

20. A method of producing a nonwoven fabric as in claim 14, wherein said fabric is hydroentangled at substantially the same rate as said filaments are extruded.

21. A method of producing a nonwoven fabric as in claim 14, wherein said fabric having a basis weight of between about 20 and 450 g/m^2.

22. A method of producing a nonwoven fabric as in claim 14, wherein said hydroentangling jets are from 0.5 to 3 inches from said filaments.

23. A method of producing a nonwoven fabric as in claim 14, wherein successive ones of said plurality of water jets are directed at opposing surfaces of the fabric.

24. A method of producing a nonwoven fabric as in claim 14, further comprising the additional step of adding secondary component fibers to said web comprising between 5% and 95% by weight of said fabric, said fibers chosen from the group comprising short staple polymer fibers, wood pulp, synthetic pulp, and melt-blown filaments.

25. A method of producing a nonwoven fabric as in claim 14, wherein said unbonded web comprises two or more layers of said substantially endless filaments.

26. A method of producing a nonwoven fabric as in claim 14, wherein said at least one successive water jet stations comprise at least one pre-entanglement station at a preliminary hydraulic pressure and at least one entanglement water jet station at an entangling hydraulic pressure.

27. A method of producing a nonwoven fabric as in claim 26, wherein said at least one pre-entangling jet station comprises from 1 to 4 water jet stations, each of said stations having a plurality of jets with an orifice of 0.004 to 0.008 inches, said preliminary hydraulic pressures are between about 100 to 5,000 psi, and said at least one entangling jet station comprise form 1 to 4 jet stations, each having a plurality of jets having an orifice of 0.004 to 0.008 inches, and said entangling hydraulic pressures are between about 1,000 to 6,000 psi.

28. A method of producing a nonwoven fabric as in claim 26, wherein said fabric has a basis weight of less than about 50 g/m^2, and said preliminary hydraulic pressures are between about 100 and 800 psi, said entangling hydraulic pressures are between about 1,000 to 2,000 psi.

29. A method of producing a nonwoven fabric as in claim 26, wherein said fabric has a basis weight of greater than 50 g/m^2, and said preliminary hydraulic pressures are between about 100 to 5,000 psi, and said entangling hydraulic pressures are between about 3,000 to 6,000 psi.

30. A method of producing a nonwoven fabric as in claim 26, further comprising imparting a pattern on said fabric by entangling said filaments against a pattern forming member with patterning water jets having a patterning hydraulic pressure.

31. A method of producing a nonwoven fabric as in claim 30, wherein said pattern forming member comprises a forming belt or a forming drum.

32. A method of producing a nonwoven fabric as in claim 30, wherein said patterning hydraulic pressure is between about 2,000 to 6,000 psi.

33. A method of producing a nonwoven fabric as in claim 30, wherein said fabric has a basis weight of less than about 50 g/m^2, and said patterning hydraulic pressure is between about 2,000 to 3,000 psi.

34. A method of producing a nonwoven fabric as in claim 30, wherein said fabric has a basis weight of less than about 50 g/m^2, and said patterning hydraulic pressure is between about 3,000 to 6,000 psi.

35. A method of producing a nonwoven fabric, said method comprising the sequential step of:

a) continuously melt-extruding substantially endless polymer filaments onto a three-dimensional image transfer device to form an unbond web of filaments, said filaments having a denier of about 1 to 2.5;

b) continuously and with out interruption pre-entangling said filaments with from one to four pre-entangling water jet stations having a pre-entangling hydraulic pressure of between about 100 and 6,000 psi; and then

c) entangling said filaments to form a packed interengaged loop configuration of filaments substantially free from knotting, wrapping, and breaking, with from one to four entangling water jet stations at an entangling hydraulic pressure of between about 1,200 and 6,000 psi to form a coherent web.

36. An apparatus for producing a nonwoven fabric, comprising:

a) a means for continuously melt-extruding one or more layers of an unbonded web of substantially endless thermoplastic polymer filaments, said filaments having a denier of between about 0.5 to 3;

b) a three-dimensional image transfer device for supporting said web; and

c) at least one water jet entanglement station for continuously and without interruption entangling said web with water streams of an entanglement hydraulic pressure to form a coherent web.

37. An apparatus as in claim 36, wherein said means for depositing filaments comprises an extruder having means for spinning continuous filaments, said filaments having a denier of between about 1 and 2.5.

38. An apparatus as in claim 36, wherein said moving support means is chosen from the group comprising a single wire, a dual wire, and a forming drum.

39. An apparatus as in claim 36, wherein said moving support having a three-dimensional surface.

40. An apparatus as in claim 36, wherein said entanglement hydraulic pressure is between about 100 and 6,000 psi.

41. An apparatus as in claim 36, wherein said entangling jets result in said filaments having an interengaged packed loop entanglement substantially free from knotting, wrapping, and breaking.

42. An apparatus as in claim 36, further comprising means for adding a second component filament to said web.

43. An apparatus as in claim 36, further comprising at least one pre-entanglement water jet station comprising a plurality of pre-entanglement water jets for continuously and without interruption pre-entangling said filament web with water streams of a pre-entanglement hydraulic pressure, said pre-entanglement water jet pressure being less than or equal to said entanglement hydraulic pressure.

44. An apparatus as in claim 43, wherein said at least one pre-entanglement water jet stations comprise from one to four water jet stations, and said pre-entanglement hydraulic pressure is between 100 and 5,000 psi, and said entanglement hydraulic pressure is between about 1,000 and 6,000 psi.

45. A nonwoven fabric comprising:

a web of substantially continuous thermoplastic filaments, wherein said fabric is substantially free of filament ends intermediate end portions of said fabric, said thermoplastic filament having a denier of about 1.2 to 2.5.

said thermoplastic filaments being hydroentangled on a three-dimensional image transfer device in the form of interengaged packed, continuous loops,

said fabric being extensible by disengagement and unpacking of said packed filament loops and straightening of said filaments prior to any substantial degree of breakage of said filaments,

said fabric exhibiting cross-direction elongation of at least about 90%, and machine direction elongation of at least about 75%, while exhibiting tensile strength generally proportional to cross-direction and machine direction elongation values.

46. The fabric of claim 45, wherein:

said fabric has a fiber entanglement frequency of at least about 10.0, and a fiber entanglement completeness of at least 1.00.

47. A nonwoven fabric, comprising:

plural laminations each comprising a web of substantially continuous polymeric thermoplastic filaments, wherein each said web is substantially free of filament ends intermediate end portions of each said web,

said thermoplastic filaments of each said web exhibiting a bonding temperature which differs significantly from the bonding temperatures of the thermoplastic filaments of an adjacent lamination,

said laminations being hydroentangled on a three-dimensional image transfer device whereby the filaments of the plural laminations interengage with each other to integrate and bond said laminations.

48. A nonwoven fabric in accordance with claim 47, wherein:

one of said webs comprises polyethylene thermoplastic filaments having a denier from about 2 to 5, and comprises between about 40% to 90% of the weight of said fabric, and said nonwoven fabric has a basis weight from about 15 gsm to 80 gsm.

49. A nonwoven fabric in accordance with claim 48, wherein:

an adjacent one of said webs comprises thermoplastic filaments selected from the group consisting of polypropylene and polyester, wherein the filaments have a denier of about 0.5 to 3.

50. A nonwoven fabric in accordance with claim 48, wherein said one of said webs comprise polyethylene thermoplastic filaments having a denier of about 3.5, and comprises about 75% of the weight of said fabric, an adjacent one of said laminations comprising polypropylene thermoplastic filaments having a denier of about 1.5.

51. A nonwoven fabric in accordance with claim 47, wherein said fabric includes plural laminations each comprising polyethylene thermoplastic filaments, and another lamination therebetween comprising polypropylene thermoplastic filaments,

said laminations comprising polypropylene filaments comprising about 10% to 60% of the weight of said fabric, with the polypropylene filaments having a denier of about 0.5 to 3,

said laminations comprising polyethylene together comprising from about 40% to 90% of the weight of said fabric, with the polyethylene filaments having a denier of about 2 to 5.

52. A process of making a laminated nonwoven fabric, comprising the steps of:

providing plurality precursor webs each comprising substantially continuous polymeric thermoplastic filaments; and

hydroentangling said precursor webs on a three-dimensional image transfer device to interengage the filaments of adjacent ones of said webs to form respective plural laminations of said nonwoven fabric,

wherein the thermoplastic filaments of each said web exhibiting a bonding temperature which differs significantly from the bonding temperature of the thermoplastic filaments of an adjacent one of said webs.

53. A process of making a laminated nonwoven fabric in accordance with claim 52, wherein

one of said precursor webs comprises polyethylene filaments having a denier of about 2 to 5, said one web comprising about 40% to 90% of the weight of said fabric,

an adjacent one of said precursor webs comprising thermoplastic filaments selected from the group consisting of polypropylene and polyester, wherein the filaments have a denier of about 0.5 to 3.

54. A process of making a laminated nonwoven fabric in accordance with claim 53, wherein

at least one of said precursor webs comprises lightly thermally bonded filaments, said hydroentangling step acting to break thermal bonds formed in said at least one precursor web.

55. A process of making a nonwoven fabric in accordance with claim 53, wherein

said step of providing plural precursor webs includes providing at least one of said webs in an unbonded form from an associated spunbonding apparatus.

56. A method of making a hydroentangled nonwoven fabric of continuous filaments, comprising the steps of:

a) superimposing at least two layers of continuous filaments spunbond fabrics, said fabrics bonded by thermal point bonds, supporting said layers on a three-dimensional image transfer device to form an unbonded laminate; and

b) subjecting at least a first side of said laminate to fine water jets at high pressure, said water jets causing disruption of said thermal point bonds and causing the filaments of said at least two layers to become entangled to form a coherent final fabric.

57. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said layers have a basis weight of 15 to 100 g/m^2, and said coherent final fabric has a basis weight of between about 50 to 600 g/m^2.

58. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said layers have a basis weight of 50 to 75 g/m^2, and said coherent final fabric having a basis weight of 250 to 600 g/m^2.

59. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said layers have a basis weight of 15 to 25 g/m^2, and said coherent final fabric having a basis weight of 50 to 100 g/m^2.

60. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said substrate layers comprise a member of the group consisting of polyolefins, polyamide, polyesters, and combinations thereof.

61. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said substrate layers comprises polyesters.

62. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said substrate layers comprise fibers of 0.2 to 3.0 denier.

63. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said substrate layers have thermal bonds covering from 5% to 45% of layer area.

64. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said substrate layers have thermal bonds covering from 10% to 30% of layer area.

65. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein said coherent final fabric is substantially free of thermal bonds.

66. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein said coherent final fabric is characterized by continuous filaments hydroentangled into an arrangement of packed loops and spirals that are substantially free of filament breakage and knotting.

67. A method of making a hydroentangled nonwoven fabric as in claim 56, further comprising hydroentangling at least an additional prebonded nonwoven web of staple fibers with said at least two spunbond layers.

68. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein said image transfer device comprises a porous forming drum having a three-dimensional surface.

69. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein said water jets operate at greater than 1,500 psi pressure.

70. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein said water jets operate at greater than 2,000 psi pressure.

71. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein said water jets operate at about 4,500 psi pressure.

72. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein said substrate layers are hydroentangled at a rate of at least 125 m/min.

73. A method of making a hydroentangled nonwoven fabric as in claim 56, further comprising the step of subjecting a second side of said laminate to fine water jets operating at high pressure.

74. A method of making a hydroentangled nonwoven fabric as in claim 56, wherein each of said substrate layers comprise polyester, and the method further comprises the step of jet dyeing said cohesive and durable fabric.

75. A method of making hydroentangled nonwoven fabric of continuous filaments, comprising the steps of:

a) superimposing at least a first and a second layer of continuous filament spunbond fabrics, said fabrics bonded by thermal point bonds, said fabrics comprising polyester filaments of about 0.2 to 3.0 denier, said layers each having a basis weight of between about 15 to 100 g/m^2, supporting said layers on a three-dimensional image transfer device to form an unbonded laminate;

b) subjecting a first side of said laminate to fine water jets operating at a pressure of at least 1,500 psi, subjecting a second side of said laminate to fine water jets operating at a pressure of at least 3,000 psi, said water jets causing disruption of substantially all of said thermal point bonds and causing the filaments of said at least two layers to become entangled and to form a coherent final fabric having a basis weight of between about 50 to 600 g/m^2, said

coherent final fabric characterized by an arrangement of packed loops and spirals subsequently free of filament breakage and knotting; and

jet dyeing said final coherent fabric.

76. A hydroentangled nonwoven fabric of continuous filaments, said fabric comprising a plurality of layers of continuous filament nonwoven fabrics which have been initially thermally point bonded, said layers being hydroentangled together on a three-dimensional image transfer device to form a cohesive and durable fabric, said hydroentangled fabric being characterized by the substantial absence of thermal bonding in the layers.

77. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers has a basis weight of 15 to 100 g/m^2, and said cohesive and durable fabric has a basis weight of between about 50 to 600 g/m^2.

78. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers has a basis weight of 50 to 75 g/m^2, and said cohesive and durable fabric having a basis weight of 250 to 600 g/m^2.

79. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers has a basis weight of 15 to 25 g/m^2, and said cohesive and durable fabric having a basis weight of 50 to 100 g/m^2.

80. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers comprise a member of the group consisting of polyolefins, polyamide, polyesters, and combinations thereof.

81. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers comprise polyesters.

82. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers comprise fibers of 0.2 to 3.0 denier.

83. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers initially has thermal bonds covering from 5% to 45% of layer area.

84. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers initially has thermal bonds covering from 10% to 30% of layer area.

85. A hydroentangled nonwoven fabric as in claim 76, wherein said coherent final fabric is substantially free of thermal bonds.

86. A hydroentangled nonwoven fabric as in claim 76, wherein said coherent final fabric is characterized by continuous filaments hydroentangled into an arrangement of packed loops and spirals that are substantially free of filament breakage and knotting.

87. A hydroentangled nonwoven fabric as in claim 76, further comprising an additional prebonded nonwoven web of staple fibers hydroentangled with said plurality of thermally bonded layers.

88. A hydroentangled nonwoven fabric as in claim 76, wherein a first of said plurality of layers is hydroentangled with at least a second of said layers by subjecting said first layer while superimposed on said at least a second layer to jets operating at pressures greater than 1,500 psi.

89. A hydroentangled nonwoven fabric as in claim 76, wherein a first of said plurality of layers is hydroentangled with at least a second of said layers by subjecting said first layer while superimposed on said at least a second layer to jets operating at pressures greater than 2,000 psi.

90. A hydroentangled nonwoven fabric as in claim 76, wherein a first of said plurality of layers subjected to jets operating at pressures greater than 1,500 psi, and a second of said plurality of layers subjected to jets operating at pressures greater than 3,000 psi.

91. A hydroentangled nonwoven fabric as in claim 76, wherein each of said plurality of layers comprises polyester, and said cohesive and durable fabric jet dyed.

92. A hydroentangled nonwoven fabric of continuous filaments, said fabric comprising a plurality of layers of initially thermally point bonded continuous filament nonwoven fabrics, each of said layers comprised of

polyester and having a basis weight of between 15 to 100 g/m^2, said layers being hydroentangled on a three-dimensional image transfer device together to form a cohesive and durable fabric having a basis weight of between about 50 to 600 g/m^2, said hydroentangled fabric being characterized by the substantial absence of thermal bonding in the layers and characterized by continuous filaments hydroentangled into an arrangement of packed loops and spirals that are substantially free of filament breakage and knotting, said cohesive and durable fabric being jet dyed.